



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1406; Project Identifier MCAI-2022-00590-G]

RIN 2120-AA64

Airworthiness Directives; DG Flugzeugbau GmbH and Schempp-Hirth

Flugzeugbau GmbH Gliders

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2015-09-04 R1, which applies to DG Flugzeugbau GmbH Model DG-1000T gliders equipped with a Solo Kleinmotoren GmbH (currently Solo Vertriebs-und Entwicklungs-GmbH) (Solo) Model 2350 C engine. AD 2015-09-04 R1 prohibits operation of the engine and requires performing a magnetic particle or dye penetrant inspection of the propeller shaft and reporting the results of the inspection to Solo. This proposed AD is prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as occurrences of rupture of the eccentric axle on Solo Model 2350 C engines (installed on DG Flugzeugbau GmbH Model DG-1000T gliders in the United States) and an occurrence on a Solo Model 2350 D engine (installed on Schempp-Hirth Flugzeugbau GmbH (Schempp-Hirth) Model Duo Discus T gliders in the United States). This proposed AD would require repetitive replacement of the eccentric axle, would add the Schempp-Hirth Model Duo Discus T gliders to the applicability, and would retain from AD 2015-09-04 R1 the option of

operating the glider with the engine non-operative instead of replacing the eccentric axle.

The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this NPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1406; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the MCAI, any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For service information identified in this NPRM, contact Solo Kleinmotoren GmbH, Postfach 600152, D71050 Sindelfingen, Germany; phone: +49 703 1301-0; fax: +49 703 1301-136; email: aircraft@solo-germany.com; website: [aircraft.solo-global/gb/](https://aircraft.solo-global.com/gb/).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Jim Rutherford, Aviation Safety Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4165; email: jim.rutherford@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-1406; Project Identifier MCAI-2022-00590-G” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked

submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Jim Rutherford, Aviation Safety Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 901 Locust, Room 301, Kansas City, MO 64106. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2015-09-04 R1, Amendment 39-18492 (81 FR 26124, May 2, 2016) (AD 2015-09-04 R1), for DG Flugzeugbau GmbH Model DG-1000T gliders equipped with a Solo Model 2350 C engine. AD 2015-09-04 R1 was prompted by MCAI originated by the European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA), which is the Technical Agent for the Member States of the European Union. EASA issued AD 2015-0052R1, dated November 19, 2015 (EASA AD 2015-0052R1), to correct an unsafe condition identified as engine shaft failure.

AD 2015-09-04 R1 prohibits operation of the engine and requires performing a magnetic particle or dye penetrant inspection of the propeller shaft and reporting the results of the inspection to Solo. The FAA issued AD 2015-09-04 R1 to prevent failure of the engine shaft with consequent propeller detachment that could result in damage to the glider or injury of persons on the ground.

Actions Since AD 2015-09-04 R1 was Issued

Since the FAA issued AD 2015-09-04 R1, EASA superseded AD 2015-0052R1 and issued EASA AD 2022-0044R1, dated April 29, 2022 (referred to hereafter as “the MCAI”). The MCAI states an occurrence of rupture of the eccentric axle on a Solo Model 2350 D engine (installed on Schempp-Hirth Model Duo Discus T gliders in the United States). The MCAI specifies replacing the eccentric axle with a new part and

establishing a life limit for this part. You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1406.

Related Service Information under 1 CFR Part 51

The FAA reviewed Solo Kleinmotoren GmbH Technische Mitteilung (English translation: Service Bulletin), Nr. 4603-19, Ausgabe (English translation: dated) January 31, 2022, which specifies procedures for replacing the eccentric axle with eccentric axle part number (P/N) 2031211V2 for Solo Model 2350 D engines, which are installed on Schempp-Hirth Model Duo Discus T gliders in the United States.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

FAA's Determination

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of these same type designs.

Proposed AD Requirements in this NPRM

This proposed AD would retain a certain action from AD 2015-09-04 R1. The operating limitation for the DG Flugzeugbau GmbH Model DG-1000T gliders equipped with a Solo Model 2350 C would continue to be allowed by the proposed AD instead of replacing the eccentric axle. This proposed AD would also add the Schempp-Hirth Model Duo Discus T gliders equipped with a Solo Model 2350 D engine to the applicability, and require repetitive replacement of the eccentric axle. This proposed AD would also require incorporation of the final rule into the Limitations section of the existing aircraft flight manual for your glider if the operator chooses to operate the glider with the engine

inoperative. The proposed incorporation of the operating limitation into the flight manual of the glider and removal of the operating limitation may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance in accordance with 14 CFR 43.9(a) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439. The proposed incorporation of the operating limitation into the flight manual of the glider and removal of the operating limitation are not considered maintenance actions and may be done equally by a pilot or a mechanic and are exceptions to the FAA's standard practice.

Differences Between this Proposed AD and the MCAI

The MCAI, for the DG Flugzeugbau GmbH Model DG-1000T gliders equipped with a Solo Model 2350 C engine, has a compliance time for the initial eccentric axle replacement based on the effective date of superseded EASA AD 2015-0052-E, dated March 27, 2015. This proposed AD would have a compliance time for these gliders based on the effective date of the final rule because there was not a requirement in AD 2015-09-04 R1 to replace the eccentric axle.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 8 gliders of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replace the eccentric axle	2 work-hours x \$85.00 per hour = \$170	\$100	\$270 per replacement cycle	\$2,160 per replacement cycle

If any operator chooses to not replace the eccentric axle and instead operates the glider with the engine inoperative, the proposed operating limitation incorporation would

take .5 work-hour at \$85 per hour for a total of \$42.50 per airplane. If at any time after, the operator chooses to remove the operating limitation, this proposed action would also take .5 work-hour at \$85 per hour for a total of \$42.50 per airplane.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2015-09-04 R1, Amendment 39-18492 (81 FR 26124, May 2, 2016); and

b. Adding the following new airworthiness directive:

DG Flugzeugbau GmbH and Schempp-Hirth Flugzeugbau GmbH: Docket No. FAA-2022-1406; Project Identifier MCAI-2022-00590-G.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2015-09-04 R1, Amendment 39-18492 (81 FR 26124, May 2, 2016).

(c) Applicability

This AD applies to DG Flugzeugbau GmbH Model DG-1000T gliders and Schempp-Hirth Flugzeugbau GmbH (Schempp-Hirth) Model Duo Discus T gliders, all serial numbers, certificated in any category, with a Solo Vertriebs- und Entwicklungs-

GmbH (previously Solo Kleinmotoren GmbH) (Solo) Model 2350 C or Model 2350 D engine installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7200, Engine
(Turbine/Turboprop).

(e) Unsafe Condition

This AD was prompted by occurrences of rupture of the eccentric axle on Solo Model 2350 C engines (installed on DG Flugzeugbau GmbH Model DG-1000T gliders in the United States) and an occurrence on a Solo Model 2350 D engine (installed on Schempp-Hirth Model Duo Discus T gliders in the United States). The FAA is issuing this AD to prevent failure of the engine shaft with consequent propeller detachment. The unsafe condition, if not addressed, could result in damage to the glider or injury of persons on the ground.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Actions

(1) For DG Flugzeugbau GmbH Model DG-1000T gliders equipped with a Solo Model 2350 C engine, before further flight after the effective date of this AD, replace each eccentric axle that is not part number (P/N) 2031211V2 with an eccentric axle that is P/N 2031211V2 that has zero hours time-in-service (TIS).

Note 1 to paragraph (g)(1): DG Flugzeugbau Technical Note 1000/26, dated September 23, 2015, contains information related to replacing the eccentric axle specific for the DG Flugzeugbau GmbH Model DG-1000T gliders. Solo Kleinmotoren GmbH Technische Mitteilung (English translation: Service Bulletin), Nr. 4603-17, Ausgabe (English translation: dated) July 15, 2015, contains information related to replacing the eccentric axle for the Solo Model 2350 C engine, but is not specific to the DG

Flugzeugbau GmbH Model DG-1000T gliders.

(2) For Schempp-Hirth Model Duo Discus T gliders equipped with a Solo Model 2350 D engine, within 30 hours TIS of engine operation after the effective date of this AD, replace each eccentric axle that is not P/N 2031211V2 with an eccentric axle that is P/N 2031211V2 that has zero hours TIS in accordance with Action 1, Note 2, and Pictures 1 through 6 of Solo Kleinmotoren GmbH Technische Mitteilung (English translation: Service Bulletin), Nr. 4603-19, Ausgabe (English translation: dated) January 31, 2022.

Note 2 to paragraph (g)(2): This service information contains German to English translation. The European Union Aviation Safety Agency (EASA) used the English translation in referencing the document. For enforceability purposes, the FAA will refer to the Solo Kleinmotoren service information in English as it appears on the document.

(3) For all gliders, after the initial replacement required by paragraph (g)(1) or (2) of this AD, as applicable, or if an eccentric axle P/N 2031211V2 was installed as of the effective date of this AD, within intervals not to exceed 50 hours TIS of engine operation, replace each eccentric axle P/N 2031211V2 with an eccentric axle P/N 2031211V2 that has zero hours TIS as specified in paragraph (g)(1) or (2) of this AD, as applicable.

(4) It is allowed to operate a glider having a Solo Model 2350 C or Model 2350 D engine installed with the engine inoperative instead of replacing the eccentric axle. To operate with the engine inoperative, place a copy of this AD into the Limitations section of the existing aircraft flight manual for your glider and do not operate the engine.

(i) Remove this operating limitation after replacing the eccentric axle as required by paragraphs (g)(1) or (2) and (3) of this AD.

(ii) Both the incorporation and removal of the operating limitation may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance

with §§ 43.9(a) and 91.417(a)(2)(v). The record must be maintained as required by § 91.417, 121.380, or 135.439.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in § 39.19. In accordance with § 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (i)(2) of this AD or email to: 9-AVS-AIR-730-AMOC@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Additional Information

(1) Refer to EASA AD 2022-0044R1, dated April 29, 2022, for related information. This EASA AD may be found in the AD docket at regulations under Docket No. FAA-2022-1406.

(2) For more information about this AD, contact Jim Rutherford, Aviation Safety Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 901 Locust, Room 301, Kansas City, MO 64106; phone: (816) 329-4165; email: jim.rutherford@faa.gov.

(3) For DG Flugzeugbau service information identified in this AD that is not incorporated by reference, contact DG Flugzeugbau GmbH, Otto-Lilienthal Weg 2, D-76646 Bruchsal, Germany; phone: +49 (0)7251 3202-0; email: info@dg-flugzeugbau.de; website: dg-flugzeugbau.de/. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas

City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(4) Solo service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (j)(3) and (4) of this AD.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Solo Kleinmotoren GmbH Technische Mitteilung (English translation: Service Bulletin), Nr. 4603-19, Ausgabe (English translation: dated) January 31, 2022.

Note 3 to paragraph (j)(2)(i): This service information contains German to English translation. The EASA used the English translation in referencing the document. For enforceability purposes, the FAA will refer to the Solo Kleinmotoren service information in English as it appears on the document.

(ii) [Reserved]

(3) For Solo service information identified in this AD, contact Solo Kleinmotoren GmbH, Postfach 600152, D71050 Sindelfingen, Germany; phone: +49 703 1301-0; fax: +49 703 1301-136; email: aircraft@solo-germany.com; website: aircraft.solo.global/gb/.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the

availability of this material at NARA, email: fr.inspection@nara.gov, or go to:

www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on December 7, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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